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Steven E. Parker

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EXAMINER

SEDIGHIAN, REZA

ART UNIT

PAPER NUMBER

2613

MAIL DATE

DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

09/904,289

Applicant(s)

PARKER, STEVEN E.

Examiner

M. R. Sedighian

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 September 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 and 6-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 19-27 is/are allowed.
- 6) ☒ Claim(s) 1-4 and 6-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 3/25/05 and 1/9/06 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

1. This communication is responsive to applicant's 9/11/06 amendments and remarks. The amendments have been entered. Claims 1-4 and 6-27 are now pending.

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 3-4, and 7-18 are rejected under 35 U.S.C. 102(b) as being anticipated by Lindsey et al. (US Patent No: 6,226,296).

Regarding claims 1, 4, 7, and 13, Lindsey teaches a method of communicating audio information among a plurality of audio devices (col. 13, lines 58-64, col. 14, lines 30-32), comprising: providing at least one interconnect hub (for example, node 1100, figs. 10, 11); providing a plurality of audio connection devices (each node 1100, 1200, and 1300 has audio/video units 1111 in a data source block 1110, respectively, such as the one shown in fig. 11) each of which is configured to connect to a plurality of separate audio signal sources (col. 14, lines 30-32, each data source block 1110 generates audio and/or video data signals) and which is configured to provide communications among these separate audio sources (col. 13, lines 61-66, note that node 1100 receives/transmits video signals and T1 signals from/to different sources, shown in fig. 10); connecting the at least one interconnect hub (1100, figs. 10, 11) to the plurality of audio connection devices (col. 14, lines 29-32, note that interconnect hub 1100 is connected to respective nodes 1200 and 1300, each having an audio connection device such as audio/video unit 1111, and each of the nodes 1100, 1200, and 1300 communicating with signal sources V1,

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V2, V3, V4, V5, FDDI, 4TI, 4E, shown in fig. 10) to form a logical ring network (ring network 1400 that connects nodes 1100, 1200, and 1300 is logical ring network since data signals are transmitted in time division multiplex format) of audio connection devices (the audio connection devices 1111 in each node 1100, 1200, 1300 of the ring network 1400) with the interconnect hub at the center of the ring network in a physical star configuration (col. 14, lines 33-40, node 1100 or node 1300 can be considered as an interconnect hub that is placed at the center of ring network 1400, and wherein node 1100 is in a physical star configuration with respect to signal sources V1, V2, V3, V4, V5, FDDI, 4TI, 4E, shown in fig. 10), wherein the audio connection devices connect to each other through the at least one interconnect hub (the audio connection devices of each node are connected to each other through the ring network 1400); digitizing (1123, fig. 11) audio information from audio sources to generate digital audio signals (col. 15, lines 10-13); transmitting the digital audio data signal from the audio connection devices to the interconnect hub (the digitized audio data signal from the audio connection devices are transmitted by interconnect hub, also interconnect hub 1100 receives the digital audio data signal from the other nodes 1200 and 1300); and synchronously (1124, fig. 11) transmitting the digital audio data signals to each of the audio connection devices connected in a ring through the at least one interconnect hub using synchronous time division multiplex access (TDMA) communications (col. 14, lines 29-40, the digital audio data signals from node 1100 transmitted to other nodes 1200, 1300, and to the other audio connection devices such as the audio/video units, shown in figs. 10, 12). As to claim 13, Lindsey teaches a fiber optic (col. 15, lines 39-44) concentrated logical ring (1400, fig. 10, note that ring network 1400 can be a fiber optic ring since the output of multiplexer can be fed to an optical transmitter that can be further coupled to

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an optical fiber, and is a logical ring since the data signals are transmitted in time division multiplex format) configured as a physical star communication network to a plurality of digital signal sources (interconnect hubs or nodes 1100, 1200, and 1300, are in a physical star configuration with respect to signals sources V1, V2, V3, V4, V5, FDDI, 4TI, 4E, shown in fig. 10); a plurality of connection devices (connection devices such as users, or signals sources V1, V2, V3, V4, V5, FDDI, 4TI, 4E, and audio/video units 1111 of each of the nodes 1100, 1200, 1300) coupled to the fiber optic ring (1500, fig), each connection device receiving analog signals from at least one signal source and converting the received analog signals into digital data signals (col. 14, lines 29-33, col. 15, lines 10-12), each connection device comprises a digital signal processor (1123, fig. 11) for selective mixing of the signals received from the signal source (col. 15, lines 3-8); and a central hub (for example, node 1100 or 1300 in fig. 10) coupled to provide the center of physical star communication network for the fiber optic logical ring (logical ring network 1400, fig. 10) and receiving digital data signals for routing to the connection devices (node 1100 or 1300 receives digital data from other nodes and routes the data to the connected devices), the central hub comprising a bus synchronizer (1124, fig. 11) for synchronizing the routing of digital data signals through the fiber optic ring (col. 15, lines 3-8); wherein the plurality of connection devices are configured to provide communications among a plurality of signal sources (col. 32, lines 55-58, the communication between signal sources and/or users and respective nodes 1100, 1200, 1300); and wherein the central hub comprises a ring network connecting a plurality of fiber optic network connections (1150, 1500, fig. 10) coupled to the plurality of connection devices; and wherein the central hub is configured to communicate the digital data signals to audio connection devices in the ring using synchronous

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time division multiplex access communications (col. 13, lines 42-50, col. 14, lines 16-18 and multi protocol TD multiplexer, fig. 11).

Regarding claim 3, Lindsey teaches the interconnect hub comprises at least one second ring connecting the audio communication devices (the second ring 1500 that connects the nodes 1100, 1300, and 1200 in fig. 10).

Regarding claims 8 and 14, Lindsey further teaches the central hub comprises dual counter rotating fiber optic ring (1600, fig. 10) for single point failure protection (col. 32, lines 62-63).

Regarding claims 9 and 15, Lindsey further teaches a plurality of subloops equal in number to at least the plurality of connection devices, wherein each subloop couples to at least one the connection devices (for example, the subloops between node 1100 and respective signal sources V1, V5, FDDI, 4TI and 4E).

Regarding claims 10 and 16, Lindsey further teaches the central hub comprises a plurality of ports individually coupled to a subloop of the fiber optic ring (it is obvious that the central hub 1100 has a plurality of ports in order to be connected to fiber ring 1600 and the signal sources V1, V5, 4T1).

Regarding claims 11-12 and 17-18, Lindsey further teaches the system further comprising a plurality of control panels individually coupled to one of the plurality of connection devices (note that data connection devices such as audio/video unit 1111 of node 1100 is further connected to processing unit 1121, shown in fig. 11).

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4. Claims 1, 4, and 7 are rejected under 35 U.S.C. 102(b) as being anticipated by Loscoe (US Patent No: 4,628,501).

Regarding claims 1, 4, and 7, Loscoe teaches a method of communicating audio information among a plurality of audio devices (col. 2, lines 20-25), comprising: providing at least one interconnect hub (7, fig. 2); providing a plurality of audio connection devices (for example, user stations U1 to U4, fig. 2) each of which is configured to connect to a plurality of separate audio signal sources and which is configured to provide communications among these separate audio sources (col. 2, lines 20-25, note that the system provides a full duplex communication between multiple users to carry signals such as voice and data from signal sources, not shown); connecting the at least one interconnect hub (coupler 7 in fig. 2) to the plurality of audio connection devices (U1, U2, U3, U4, fig. 2, user terminals transmit and receive voice signals to the network and from the network) to form a logical ring network of audio connection devices (ring network of fig. 2 is a logical ring, since signals are transmitted in TDM format) with the interconnect hub at the center of the ring network in a physical star configuration (col. 2, lines 60-66, coupler or hub 7 is in a star configuration with respect to user sources U1, U2, U3, U4), wherein the audio connection devices connect to each other through the at least one interconnect hub (7, fig. 2); digitizing audio information from audio sources to generate digital audio signals (col. 2, lines 23-24); transmitting the digital audio data signal from the audio connection devices to the interconnect hub (col. 2, lines 60-66); and synchronously transmitting the digital audio data signals to each of the audio connection devices connected in a ring through the at least one interconnect hub using synchronous time division multiplex access (TDMA) communications (col. 2, lines 65-66, col. 3, lines 26-51). As to claim 7, Loscoe teaches

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a digital fiber optic switching and distribution system (fig. 2) that is comprised of a fiber optic concentrated logical ring (the ring network that is made of optical duplexers 21, star coupler 7, and fiber lines T1, T2, R1, and R2 in fig. 2) configured as a physical star communication network (col. 2, lines 60-66) to a plurality of digital signal sources (the signal sources that communicate with user terminals U1, U2, U3, U4, not shown); a plurality of connection devices (U1, U2, U3, U4, fig. 2) coupled to the fiber optic concentrated logical ring (T1, R1 and T2, R2, fig. 2), each connection device receiving analog signals from a plurality signal sources (signal sources that carry voice and data to respective users U1, U2, U3, U4) and converting the received analog signals into digital data signals (col. 1, lines 14-20, col. 2, lines 20-24); and a central hub (7, fig. 2) coupled to provide the center of the physical star communication network for the fiber optic concentrated logical ring (logical ring of fig. 2) and receiving the digital data signals for routing to the connection devices (col. 2, lines 60-66); wherein the plurality of connection devices are configured to provide communications among a plurality of signal sources (col. 3, lines 26-46); and wherein the central hub comprises a ring network connecting a plurality of fiber optic network connections (T1, R1, T2, R2, D 21, fig. 2) coupled to the plurality of connection devices (U1, U2, U3, U4, fig. 2); and wherein the central hub is configured to communicate the digital data signals to each of the audio connection devices in the ring using synchronous time division multiplex access communications (col. 3, lines 41-51).

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

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having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 2 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lindsey et al. (US Patent No: 6,226,296) in view of Arimilli (US Patent No: 5,757,801).

Regarding claims 2 and 6, Lindsey differs from the claimed invention in that Lindsey does not specifically teach transmitting a frame of data at a rate of 8 KHz. Arimilli teaches data can be transmitted at a rate of 8 KHz (col. 12, lines 15-20). As it is taught by Arimilli, it would have been obvious to a person of ordinary skill in the art at the time of invention to incorporate a data transmission system that provide a data transmission rate of 8 KHz for the data transmission system of Lindsey to transmit a plurality of different audio, video, and data signals.

7. Claims 19-27 are allowed over prior art of record.

8. Applicant's arguments filed 9/11/06 have been fully considered but they are not persuasive.

Remark states Lindsey does not disclose an interconnect hub that is placed at the center of a ring network, and for example, node 1100 does not form a ring network through which nodes 1200 and 1300 connect to each other. However, Lindsey clearly discloses a ring network 1400 that connects respective ADM nodes 1100, 1200, 1300, wherein one of the nodes such as node 1100 or 1300 can be considered as an interconnect hub that is placed at the center of the ring network 1400, as it is shown in fig. 10. Remark further states fig. 10 of Lindsey depicts a physical ring network and not a physical star configuration, and Lindsey does not teach or suggest an interconnect hub forming a physical star network and providing a logical ring

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network. However, Lindsey discloses a logical ring network 1400 that is comprised of respective interconnect hubs 1100, 1200, and 1300, each forming a physical star network with respective signal sources V1, V2, V3, V4, V5, FDDI, 4TI, 4E, 8A, as it is shown in fig. 10. The ring network 1400 can be considered a logical ring network since the video or data signals are transmitted in a time-division multiplex format (col. 14, lines 16-18). Remark further discloses Loscoe does not teach or suggest a plurality of connection devices configured to provide communications among a plurality of separate signal sources, or an interconnect hub forming a physical star network and providing a logical ring network. However, Loscoe teaches such limitations. For example, Loscoe teaches a plurality of connection devices (figs. 2, 5) between users stations U1, U2, U3, U4 that are capable of receiving and carrying digitized analog signals such as voice and/or data signals (col. 2, lines 19-24), and an interconnect hub 7 that forms a physical star network (col. 2, lines 62-64) in a logical ring configuration formed by optical fibers R1, R2, R3, R4 (fig. 2). As to the limitation of “logical ring”, both ring networks of Lindsey and Loscoe are logical ring networks. The standard communication dictionary defines a logical data link, as a data link that can be established by time-division-multiplexing, or by interleaving packets on a physical (actual) data link. Applicant’s attention is directed that during the prosecution of a pending patent application, the terms found in the claims should be given the broadest reasonable interpretation, See *In re Pearson*, 181 USPQ 641 (CCPA 1974).

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to M. R. Sedighian whose telephone number is (571) 272-3034. The examiner can normally be reached on M-F (from 9 AM to 5 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on (571) 272-3022. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


M. R. SEDIGHIAN
PRIMARY EXAMINER